



Department of Neighborhood Development

Neighborhood Housing Development Division

Design, Construction and Open Space Unit

RESIDENTIAL DESIGN STANDARDS

New Construction

July 2002

INTRODUCTION:

DND has developed design standards for new construction to ensure that all projects conform to current applicable regulations, and to promote cost effective, quality design. For each project reviewed by DND the goal is to achieve the highest quality product within the cost constraints of the project. The standards are based upon regulatory requirements imposed by the Department of Housing and Urban Development (HUD), under the State HOME program and CDBG Funding for Home-ownership projects.

A major goal of DND design guidelines is to encourage the creation of designs that is:

- *Compatible with and complementary to the surrounding neighborhood. Every effort should be made to replicate architectural detailing prevalent in the neighborhood such as corbels, dentil molding, columns, cornice detail, window/door pediment treatment, porches, gables, etc. in this new construction. The architect shall be sensitive to existing massing and set backs.*
- *Results in cost effective construction.*
- *Results in low maintenance costs and energy efficiency for renters and homeowners.*
- *Uses interior and exterior space to enhance the quality of life of the residents and neighbors.*

PROCEDURES:

Upon receipt of a proposed project, DND will conduct a feasibility study in relation to design requirements, guidelines and project cost and subsidy. If requested by the developer, DND design staff will provide design and cost saving technical assistance. See the **DND Residential Design Review Process** document for specific submission requirements.

Note: The developer shall provide DND with copies of the written Standard Form of Agreement Between Owner and Design/ Builder (AIA form B141 or similar document), verifying the commissioning of their architect for the project. This shall be done after the issuance of the Award Letter and with the submission of schematic drawings for Design Approval. The Project Architect shall provide full design services including, but not limited to, architectural, structural, mechanical, electrical, plumbing, civil, and landscaping drawings and specifications. Weekly site visits are required during construction.

GUIDELINES:

Projects shall comply with the design and construction requirements of other agencies including but not limited to the following list. DND will not review projects for compliance with other regulations; developers are required to seek the necessary public approvals for their projects.

- City of Boston Municipal Agencies; including BW/SC Site Plan Guidelines
- Department of Housing and Urban Development

RESIDENTIAL DESIGN STANDARDS

New Construction

- State HOME, HSF, FCF, and LIHTC programs
- Boston Landmarks Commission
- Massachusetts State Building Code (latest edition)
- Boston Zoning Code;
- Rules and Regulations of the Massachusetts Architectural Access Board;
- Federal Fair Housing Amendments Act;
- Massachusetts Fair Housing Law;
- Section 504 of the Federal Rehabilitation Act; Americans with Disabilities Act.

General Energy Requirements:

All new buildings shall be designed to meet the National Energy Five Star efficiency performance standard of 86. All procedures used for this Five Star rating shall comply with National Home Energy Rating Systems guidelines.

Project Reviews:

Projects shall receive Design Approval, Conditional, and Final Construction Document Approvals at respective stages of development of drawings, specifications, and construction costs based on compliance with these standards.

NEIGHBORHOOD COMPATIBILITY

It is a primary concern of DND and residents of Boston that all new housing developments fit into and enhance existing neighborhoods. The following building and site design standards explain the key issues that determine neighborhood compatibility.

Placement of Buildings on Sites:

New buildings shall align with the front edge of existing buildings along a street. At a corner, buildings shall be placed to align with existing buildings facing both streets. On blocks without existing buildings, new buildings shall be placed in accordance with other buildings on adjacent blocks. Buildings shall be oriented with their narrow dimension along the street edge and their long dimension perpendicular to the street edge.

Street Boundaries:

Use of clear boundaries to define public and private space can create a sense of security and comfort in dense urban neighborhoods. The public (sidewalk edge) boundary of the property shall be defined using fencing, walls, hedges, line of trees, or other landscape material. Use of black vinyl covered chain link fencing is restricted to property edges that do not face a public street. Fence height should match height and compliment material of fencing on abutting property.

Parking:

The zoning requirements for off-street parking shall be achieved with parking layouts designed to minimize curb cuts and minimize area of pavement (impervious surfaces). Side by side driveways shall be avoided, and views from the public street edge of parking lots and cars shall be reduced to a minimum. Parking lots for large developments shall be located in the rear of the development and buffered from adjacent properties with landscaping.

Trees and Landscaping:

Existing mature and healthy trees shall be preserved wherever possible. Each new, one and two family dwelling shall have a minimum of one shade tree, (3 inch caliper minimum) planted at the street edge and one flowering tree, (3 inch caliper minimum) planted in the rear yard. Landscaping on larger projects shall be appropriate to the structure(s) and compatible with the neighborhood. Existing rows of trees along a street shall be maintained. All sites shall be landscaped with lawns at all unpaved surfaces and plantings along the building foundation at street facing elevations. Landscaping shall compliment the building and maximize use of open space. All plantings shall be allergy reducing.

Building Proportion:

Width and height proportions of new buildings shall be similar to the traditional pattern of

RESIDENTIAL DESIGN STANDARDS

New Construction

buildings found on adjacent streets. Boston residential buildings traditionally have a vertical proportion (taller than they are wide) and building elements (doors, windows, bay projections) all have similar vertical proportions.

Exterior Detail:

Buildings shall have exterior details of quality and dimension equal to or better than existing buildings in the neighborhood. Design of exterior details shall carefully consider function, materials, and maintenance and may include corner boards, look-outs, built-out rakes/gables, window/door trim, frieze boards, skirt boards, columns, brackets, and railings.

Exterior Building Materials:

Building materials visible from public streets shall be of equal quality or better than materials on existing buildings in the neighborhood. Pressure preservative treated wood (except for framing not visible), basement bulkheads, or mechanical equipment shall not be placed on street facing elevations or other highly visible locations.

Building Entrances:

First floors of typical Boston dwellings are raised above the curb 36 to 60 inches to provide a sense of separation between public and private spaces. New residential entrances shall be raised above the sidewalk to be similar to other properties in the neighborhood. Natural surveillance shall be used to discourage crime (i.e. entrances, parking, and walkways shall be visible from inside units and the street).

Front Porches:

Front porches for one and two family homes are required in neighborhoods where existing houses have front porches. Porches for large, multi-family projects will be reviewed for neighborhood compatibility.

EXTERIOR LAYOUT DESIGN **PRINCIPLES**

Layout of buildings and units shall meet the following general design principles:

- Side and rear yards shall be enclosed with vinyl covered, chain link fencing for detached 1-3 family buildings.
- Front walkways shall connect directly to the sidewalk.
- Walkways shall be provided to secondary exterior doors.
- Canopies or roofs or other weather protection shall be provided above all exterior doors.
- Decks/platforms below small roofs or canopies shall be framed to provide a step down to the deck.
- Combination storm/screen doors shall be provided on exterior doors in two family with rental units, to improve cross ventilation and natural light in living spaces.
- Sliding doors or windows shall be avoided.
- Exterior bulkhead access shall be provided into basements of single and two family dwellings in new construction.
- Mailboxes shall be located at front entrances, fastened to painted plinth blocking.

INTERIOR LAYOUT DESIGN **PRINCIPLES**

Interior layout of units should meet the following general principles:

- Circulation space shall be designed efficiently and kept to a minimum.
- Bathrooms shall not open onto living/dining spaces.
- Coat closets shall be located near dwelling entrances.

RESIDENTIAL DESIGN STANDARDS

New Construction

- Access to rooms shall be from circulation spaces and not directly through the kitchen.
- Window location shall provide for cross ventilation in rooms (where possible) and through units.
- Buildings shall provide visual and noise barriers between private and public spaces. Minimum sound control (STC-50) between units and public hallways or common spaces shall be provided.
- Basements shall be provided unless subsurface soil conditions are unsuitable and costly to remove. If basements are not provided, adequate storage space shall be provided.
- Windows shall be provided in basements. Window wells are not permitted.

LIVABILITY

The following items address issues that have been raised by Boston residents concerning dwelling use, furniture layout, flexibility, future expansion options, and general comfort. Projects should seek to exceed the following minimum standards and to maximize benefits to residents within project budgets.

Minimum Unit Size:

- 1 Br. shall be greater than **700 net sq. ft.**
- 2 Br. shall be greater than **900 net sq. ft.**
- 3 Br. shall be greater than **1,200 net sq. ft.**
- 4 Br. shall be greater than **1,400 net sq. ft.**

NOTE 1: For apartments containing an interior stair between two or more floors within a unit, add 50 square feet per floor to the minimum square footage requirements.

NOTE 2: The minimum square footage may be reduced by up to 100 square feet if 100 square feet of private basement storage per unit is provided.

NOTE 3: Net Square Footage is measured from the centerline of the exterior wall, and includes

usable storage space, stairwells and hallways inside the unit, as well as space occupied by interior walls. Net Square Footage does not include basement or attic storage areas, common stairwells, and common hallways. However, Net Square Footage does include 50% of the area under sloped ceilings with greater than 5'-0" clearance and less than 7'-6" clearance.

Minimum Room Size:

Use/Room	Min. Area	Min. Dim.
Living Room	150 SF	12'-0"
Dining Room	100 SF	10'-0"
Living/Dining	200 SF	12'-0"
Primary Bedroom	120 SF	11'-0"
Secondary Bedroom	100 SF	9'-0"
Full Bath	35 SF	5'-0"
Hallways	N/A	3'-0"
Coat Closet	6 SF	2'-0"
Bedroom Closets	8 SF	2'-0"
Linen Closets	4 SF	1'-6"
Storage (bsmnt. or other)	30 SF	2'-0"

Minimum Number of Bathrooms:

- **2 Br. unit** shall have one full bathroom.
- **3 Br. unit** shall have at least 1 ½ bathrooms.
- **4-or-more-Br. unit** shall have at least 2 full bathrooms.

Minimum Kitchen Counter Space (*not to include sink*):

- 1 Br. unit shall have at least **6 linear feet.**
- 2 Br. unit shall have at least **8 linear feet.**
- 3 Br. unit shall have at least **10 linear feet.**
- 4+Br. unit shall have at least **12 linear feet.**

MINIMUM STANDARDS OF QUALITY FOR RESIDENTIAL DESIGN

The following standards are minimum requirements for the use of materials and specifications applied to the construction of new

RESIDENTIAL DESIGN STANDARDS

New Construction

houses. This should be read carefully to avoid delays in design and construction of projects.

NOTE: When the phrase or approved equal is used, it means that any substitution of product must be first approved by DND prior to ordering that substitution. A manufacturer's specification sheet is required for comparison of products.

DIVISION 1: GENERAL CONDITIONS

All construction permits and fees necessary for construction including street openings, sidewalk and street repairs, and opening of guaranteed streets are the responsibility of the Developer. The General Contractor is responsible for Certificates of Insurance from all sub contractors. All work shall be warranted for a minimum of one year after substantial completion. General Contractor's insurance against theft and damages is also required. City of Boston project sign is required on all sites.

Construction Site Security:

It is the General Contractor's responsibility to provide site security and to prevent loss or damage from vandalism or theft during construction of projects after hours and/or including weekends and holidays. Site security shall be carried as a line item in 'soft costs', under General Conditions, and shall not be a consideration *after* damage or theft has occurred.

DIVISION 2: SITEWORK

Site Demolition and Clearing:

The removal of all hazardous materials such as asbestos (ACM's) and lead based paint (LCM's) shall be carried out according to all applicable State and Federal regulations, including but not limited to the Mass. Dept. of Public Health, Mass. Dept. of Environmental Protection and U.S. Environmental Protection Agency, either

prior to commitment from DND, or as part of proposed work to be executed.

Soil Remediation – 21-E's:

A summary and an accurate estimate of the 21-E soil remediation plan, along with grading plans, shall be provided. Soil testing and remediation shall be approved by DND prior to execution. This is not a hard cost contingency item and shall be budgeted as a separate line item.

Landscape Features:

A Landscaping plan shall include detailed drawings of landscaping, i.e., fencing, planting beds, trees and shrubs (species and sizes) retained and removed, play areas, lighting, seating and all features adding to the aesthetic quality of the site and optimizing the use of the property. Planting will not be permitted in July or August unless an appropriate watering / maintenance plan is provided. All plant material shall be warranted for one year.

Landscaping:

Walkways: Provide the following or better: a 4 FT wide concrete walk, 4" thick 4,000 psi (air-entrained) w/ broom finish, set on a 6" base of 3/4" crushed stone at all front entrances. Bituminous concrete may be used for rear entrances.

Loam/Grass: Apply clean screened loam as needed to provide a 6" minimum deep planting bed, raked free of stones, 1" or larger, building debris and other non-organic materials. Apply fertilizer and grass seed and water for 2 weeks, (or through acceptance). Seed shall match sun exposure. Cut as necessary. *Hydroseeding shall be done only with specific DND approval.* When hydroseeding (hydraulic application) new lawns, the acceptable slurry application rate is 1,500 Lbs., dry weight, per acre using a non-asphaltic tackifier. The seed mixture shall match the sunlight exposure, i.e., full sun, partial shade or full shade. All lawns shall be maintained by the GC until after the first

RESIDENTIAL DESIGN STANDARDS

New Construction

mowing. 6" plant cover shall be maintained at sloped areas that are prone to washout.

Planting per Single Family House or per Unit in a Duplex: Plant one shade tree with a caliper width not less than 3" diameter. Plant one flowering tree with a caliper width of not less than 3" diameter. Trees shall be fully staked and shall meet AAN Standards. Plant ten (10) ornamental shrubs, spaced appropriate to their mature dimension (usually not less than 3 FT apart). Watering should continue throughout the first season or 6 months. All plant material shall be allergy reducing.

Street Trees: On street fronts where there is an existing line (3 or more) of street trees either within the sidewalk or along the property line, provide if missing, one tree per 25 FT of street frontage. The tree shall match the existing street trees in type and planting detail. The caliper width shall be not less than 3" diameter.

Utilities:

Prior to submission to DND, a survey of all existing utilities, including electrical (overhead and underground), water and sewer, gas, telephone and cable shall be done. Coordinate with "Dig Safe" and DPW, N-Star, BW/SC, Keyspan, Verizon, and CCN for layout of existing utilities. It is recommended that all permits for street openings be filed concurrently with the application of building permits. The Developer shall be responsible for determining the scope of street openings. costs for opening a "guaranteed street" or opening a street (including after November 15 and before March 15) shall be the responsibility of the Developer. The Developer shall be responsible for flowable fill required by the Department of Public Works during cold months.

Public Sidewalks:

The repair of public sidewalk(s), abutting the Property, is the responsibility of the Developer. The Developer should review the proposed project with the Public Works Department

(PWD) prior to submitting the proposed project to DND, to determine scope of sidewalk repair/replacement. If the public sidewalk(s) is scheduled to be replaced by the PWD, it is the responsibility of the Developer to install a temporary surface meeting ADA and PWD requirements. If the public sidewalk(s) is not scheduled to be replaced by PWD, but is in poor condition, as determined by PWD, then both the curbing and walking surface must be replaced, per PWD specifications. If the public Sidewalk(s) is in acceptable condition, as determined by PWD, repairs must be made, meeting PWD specs to return damaged sidewalk(s) to "like new" condition. Permits are required for new curb cuts. If a curb cut is abandoned, the curbing must be replaced and the sidewalk restored.

Fencing – Steel or Wood:

All new one and two family housing units shall be defined, at the street edge, by painted eastern red cedar picket fencing, 42" high, with 4" square capped-posts spaced no greater than 8'-0" o.c. Include one (1) latching gate for each walkway, i.e., two (2) gates for a duplex. Street edge fencing at multi-family housing shall be compatible with the neighborhood. Side yard and rear yard boundaries shall be defined by the use of heavy-duty vinyl-covered chain link fencing at least 48" high, with 2" diameter, black, hot-dipped galvanized posts (painted black) no more than 10'-0" apart and set in concrete footings 8" in diameter and at least 30" below finish grade. Provide top and bottom rails as recommended by manufacturer.

Surface Drainage:

Surface drainage shall be shown with regard to foundation, walkways, property lines and sidewalks on a grading plan. The area around the foundation shall be graded away from foundations (1/2" / Ft for a min. of 6 Ft.) and compacted to insure proper drainage with emphasis on protecting the abutting properties. Grade changes between existing properties shall be discouraged (mounds, retaining walls, etc.).

RESIDENTIAL DESIGN STANDARDS

New Construction

All surface drainage shall meet the requirements of the appropriate City agencies.

Subsurface Drainage:

Where basements are provided, subsurface drainage shall include a continuous footing drain connected to an engineer-certified, City approved subsurface drainage system.

Retaining Walls:

If the finish grade will result in surface water flowing off site, either onto abutter's property or the public walkway, it is the developer's responsibility to employ a Civil Engineer to resolve the issue through the use of drywell(s) or retaining walls of c.i.p. concrete, interlocking CMU's or fieldstone. The use of pressure-treated timbers is not allowed.

DIVISION 3: CONCRETE

Concrete Foundation:

Provide dampproofed foundations resting on proper footings on undisturbed or properly compacted soil. Control / isolation joints shall be provided in basement slabs.

Except at handicapped adaptable homes, the tops of the concrete foundation walls shall project at least 3'-0" above the curb height. Unless approved by DND, if more than 3'-0" is exposed, then a stucco finish is required. Window wells are **not** permitted.

Pre-cast Concrete Bulkhead w/Steel Doors:

In one and two family homes and townhouses, it is required that all units have both an interior connection to the basement or cellar; rear stairs with pressure - treated stringers and closed risers to include a handrail, and egress by means of a steel door – concrete bulkhead unit. The use of a pre-cast concrete bulkhead unit complete with neoprene gasket, galvanized through-bolts permanently affixed to the foundation and installed in a watertight manner with a spring-loaded steel entry door is the preferred method.

Provide a fully weather- stripped metal or wood door at the base of the bulkhead.

Housekeeping pads shall be provided under all mechanical equipment and washer/dryers.

DIVISION 6A: ROUGH CARPENTRY

Porches, Decks, and Stairs:

All exterior dwelling entrances shall have weather protected entries such as canopies, covered porches or recessed alcoves. The front porch and steps shall be framed in preservative pressure-treated (PPT) lumber with painted pine trim and risers for the steps and fir treads and decking. All wood porches, decks, exterior landings and stairs shall be enclosed with heavy duty painted pressure-treated lattice and painted pine trim. Porch platforms for typical housing should be a minimum of 6" below the Finish First Floor and for adaptable units, flush with the Finish First Floor. PPT shall be used at all locations where framing joins exterior concrete. Wherever PPT lumber is used, it shall be arsenic free. Front and rear porches shall be flush with the first floor at adaptable units.

Front Porches: on the street side shall have 1x4 fir decking, square edge, D - Select painted pine trim at skirt boards, platform trim, stair risers and column trim and painted fir top and bottom rails and balusters. Second Floor porches shall be square edge 1 x 4 Fir on PPT sleepers over an EPDM single membrane roof with a gutter, downspouts, and splash guards. Porch ceilings shall be bead board. All stairs shall have closed risers.

Rear Porches: 5/4 x 6 PPT lumber square edge, may be used. The upper levels shall be square edge 1 x 4 Fir or PPT lumber on PPT sleepers over an EPDM single membrane roof with a gutter, downspouts, and splash guards. All fasteners shall be hot-dipped galvanized zinc or stainless steel. All posts to be 6"x6" square or 6" turned, or greater as per engineering requirements.

RESIDENTIAL DESIGN STANDARDS

New Construction

Wood Blocking:

Prior to insulating and finishing walls, solid 2 x blocking shall be installed where accessories such as grab bars, towel bars, soap dishes and toilet paper holders are to be located. Solid blocking shall also be installed for future installation of grab bars, adjustable counters, and hardware in adaptable units. In projects of more than three units of new construction, all bathrooms shall be blocked to permit the retrofitting of grab-bars in the tub surround area and around the toilet as required by the MAAB Code re: adaptability.

DIVISION 6B: FINISH CARPENTRY

Exterior Detailing:

The exclusive use of MDO on dormer gables and/or building gables without additional detail is prohibited. The use of details such as decorative applied vents, fish scale shingles, frieze boards or some other contextual treatment, which is compatible with the neighborhood, is required.

Wood Handrails:

The use of round handrails and brass wall brackets is limited to basement and attic applications. Wall railings within the unit shall be of a style and size equal to the railing in the free-standing balustrade of the stairway, if applicable. Otherwise, Brosco # 66 shall be used. All railing endings must return to wall.

Interior Stairs:

All stairs shall be constructed with wooden skirt boards; materials and finish shall match stairs or baseboard trim.

Interior Door & Window Casing:

Painted-Pine 11/16"x2-1/2" Brosco 8710 jambs and head and Brosco #8645 painted-Pine window aprons.

Baseboard Trim:

A minimum of one piece pine molding, equal to Brosco Stock Molding No. 8385 FJP 9/16" x 3-1/2" (finger-jointed and primed) shall be used for painted applications and No. 8385A for stainable applications. Speed-Base, or approved equal MDF is also acceptable for painted applications.

DIVISION 7: THERMAL AND MOISTURE PROTECTION

Insulation under bay windows and cantilevers shall be R-30 minimum.

Basement Insulation:

Fiberglass batt insulation (R-19) shall be installed between floor joists in a basement or crawl space. This insulation shall be enclosed in an air infiltration barrier such as Tyvek to prevent fibers from becoming air borne. Drywall may also be used.

In lieu of the above insulation, foundation walls may be insulated with R-13 FSK insulation. Installation shall be continuous to the underside of the 1st. floor.

Roof and Attic Insulation:

In structures without accessible space in the attic, insulation shall be installed between the ceiling joists (R-38 is required).

In structures with accessible space in the attic, insulation shall be installed between the roof rafters (R-38 is required). Install full rafter bay 1" polystyrene continuous vent from soffit to ridge vent at underside of roof decking.

Attic access panels are required in all buildings where access is not provided by stairs. These access panels shall consist of a removable 'tray' containing 2" rigid insulation, R10, and shall be installed to prevent a 'cold draft' and excessive heat loss and/ or gain through this panel.

RESIDENTIAL DESIGN STANDARDS

New Construction

Flashing Materials:

The use of *exposed* anodized aluminum flashing anywhere other than step flashing at dormer and cheek walls is prohibited. The following list of metals are required for the appropriate locations:

- Chimney and cricket locations; sheet Lead flashing.
- Roof parapet cap flashing, EPDM coping or gravel stop, skylight flashing and base flashing, roof junctures, edges, windows, doors and other exterior openings: lead coated copper, or .050 Ga. factory-painted aluminum flashing.
- Provide continuous roll flashing at shed roofs. This flashing shall be factory painted – no mill finish.
- Pan flashing at all windows.

Gutters and Downspouts:

All pitched roofs including porches shall have gutters. Vinyl gutters are not acceptable. Gutters shall be sized per Code requirements, .032 Ga., seamless factory-painted aluminum or approved equal, securely fastened with straps of the same material and color as the gutters; and sealed per manufacturer's recommendations. Gutters and/or downspouts shall not discharge into gutters or roofing below.

Downspouts shall be sized to required roof surface area, .027 Ga. rectangular downspouts. Downspouts with elbows, both type 'A' and 'B', shall be securely fastened to the sidewall with straps of the same material and color as the downspouts; with a pre-cast concrete splash guard to divert run-off away from the structure at the base of each downspout or connected to the pre-cast drywell, as required. Downspouts shall not discharge at or near entryways or sidewalks.

Asphalt Roof Shingles:

Fiberglass/asphalt roof shingles with a minimum 25 year warranty roof are required.

Ice Damming:

A self adhered bituthene product such as Ice and Water Shield, or approved equal, shall be used on the first 3'-0" of the roof sheathing on all pitched roof applications as well as 3'-0" to both sides of valleys and cheek walls prior to installing the metal drip edge, felt paper and shingles. Roof pitches less than 5 in 12 shall be completely covered with the modified bitumen underlayment.

Flat Roofing:

Flat roof applications shall receive fully adhered compounded rubber sheet elastomer (EPDM) single membrane 0.060" thick sheets as manufactured by Carlisle Syntec Systems or equal, installed by certified installer, and applied per manufacturers warranted specifications. Large roof areas may consist of mechanically fastened and ballasted EPDM.

Roof Ventilation:

All pitched roof structures shall have both continuous soffit venting and ridge and/or gable venting to prevent heat build up and premature aging of the roof material. Design of gable vents shall be approved by DND.

Cementitious Siding:

Cementitious siding material, such as Hardi-plank or Cem-plank is the preferred exterior siding material for residential, one and two family construction. Combined with painted-wood and / or synthetic-wood products (such as Trim-Tech or Hardi-trim), cornerboards, door / window casings, soffit / fascia trim, skirtboards, and friezeboards / waistbands, cementitious siding with various exposures replicates the look of wood siding, and requires less maintenance than wood alone. 5/4 cornerboards shall be used with cementitious siding and 1 x _ stock on casing edges (top and sides). Glued finger-jointed pine shall not be used on exterior. All installation shall be per manufacturer's specifications. Note: siding, exterior trim and exposed foundation treatment on buildings in a

RESIDENTIAL DESIGN STANDARDS

New Construction

historical district must be approved by the Boston Landmark's Commission.

Vinyl Siding:

The use of vinyl siding is discouraged. If proposed, vinyl siding starter strips shall be aluminum to ensure a straight/true line. The siding configuration shall be triple three or double four and the thickness shall be .042 minimum, or better, with a 'brushed smooth' finish. Auxiliary accessories shall include inside/outside corners, J-trim and under sill trim pieces. The siding shall be installed over either 1/2" insulating recovery board (w/ nails of sufficient length to penetrate the sheathing properly) or an air infiltration barrier such as Tyvek. Cornerboards, door/window casings, soffit/fascia trim, skirtboards, and friezeboards/waistbands, etc. shall be either wood or cementitious material

DIVISION 8: WINDOWS / DOORS

Windows:

Windows shall be residential quality vinyl clad exterior wood sash windows with integral screens, fully weather stripped, with sash locks and integral or applied pulls. High performance window glazing, argon filled (Low-E), is required. Living Room and Dining Room windows should be the tallest with a stool cap height of 2'-0" A.F.F. and share a common height with exterior entry doors (6'-8"). Caulk all window and door units with ethylene copolymer caulk, using backer rod (close cell polyethylene Tremco, or equal) as needed. Window shim spaces shall be filled with low-expanding foam sealer. Windows shall have 1x4 exterior casings (minimum) on 3 sides and a protruding sill. Aluminum windows will only be approved where window dimensions are commercial or oversized. Historical District requirements must be met where applicable. Window configuration shall conform to that of the surrounding neighborhood.

When directed by the Landmarks Commission to use wood sashes as an element in historical preservation, it is required that those windows be supplied with TDL (true divided light) configuration and not snap-in muntin grilles.

Operable (hopper/awning) windows shall be provided in all basements.

Window Guards:

Window guards shall be installed in housing units where a child age 6 or under will be living.

Fixed Glazing:

The use of fixed glazing shall be limited to inaccessible skylights, walk-in closets and foyer locations where natural light maybe the criteria rather than ventilation, and sidelights and transoms in foyers where security is not an issue. All other situations must be satisfied with operable sash units.

Entry Doors:

To conform to energy requirements and security issues, and unless otherwise directed by the Landmarks Commission, it is required that insulated-steel entry doors be the accepted entry door unit for both exterior front, exterior rear, and apartment entries in low rise projects. Door design shall be approved by DND. To facilitate entry, both the key-in-lock and the deadbolt (1" throw) shall be keyed-alike. A peep hole shall be provided.

All doors, whether exterior or interior shall have a baseboard-mounted stop, Ives or equal, as part of the 'hardware package' to prevent damage to wall finishes. Stop finish shall match door hardware finish.

Storm/Screen Combination Exterior Doors in Two Family Homes with rental units:

All exterior doors shall be 'embossed', rather than decorative plastic applied molding, to prevent 'sagging' when used in conjunction with storm doors. The use of Harvey 'Carefree' (or approved equal) combination storm and screen doors at entries, front and rear, is required for

RESIDENTIAL DESIGN STANDARDS

New Construction

rental units. Such doors shall be properly sized for the opening and the frame caulked with a phenolic caulking material (color to match). In applications involving Owner / Tenant Detached or Semi-detached structures, both units shall require storm / screen doors front and rear.

Egress to Patio or Deck:

The use of Sliding doors to access the exterior is discouraged. Coupled with posing a security issue and probable early failure of the sliding mechanism, alternative methods should be sought. The use of a security bar is required whenever a slider is the approved method of egress. Patio/deck doors shall step down to allow out-swinging doors to open when snow is present.

DIVISION 9: FINISHES

Sound Attenuating Blankets:

Sound insulation shall be installed in floors, corridors and party walls between units, with a minimum STC of 50. PVC soil stacks shall be wrapped or the chase packed with approved sound insulation.

Drywall Corner Beads:

Whenever installing metal corner beads on wood-framed partition corners, the practice of using a 'clencher' is not permitted. The metal accessory should be mechanically fastened using 4d galv. box nails or drywall screws.

Bathroom Walls:

Though not a requirement, a ceramic tile tub-surround is the preferred choice, particularly in instances where handicap adaptability (retrofitting) is an issue. Ceramic tile of at least 4 1/4" square should be installed in Thin-set on a cement backer board. Durock, Wonder-board or other approved equal 1/2" thick glass fiber-reinforced cement tile backer as a substrate, shall be installed with galvanized roof nails per manufacturer's recommendations. The use of MR (moisture resistant) 'green board' drywall is

not allowed as a tile backer. The tile shall extend a minimum of 6'-0" above the finish floor, (A.F.F.), complete with all necessary trim pieces and caps, including a soap dish without a grip bar.

Baseboard Trim:

Vinyl cove base shall not be used anywhere except on the toe space of kitchen and bath cabinetry. Wood base shall be provided in all other areas.

Floor Finishes:

Sheet Goods and Vinyl Composition Tile (VCT):

Vinyl sheet goods or VCT shall not be used as a standard floor treatment throughout dwelling units (except as approved by DND). Sheet vinyl goods shall be limited to full bathrooms and entryways. VCT shall be limited to kitchens, dining areas, and 1/2 baths. (Dining rooms may also be covered with cut pile carpet, with review of sample by DND). Hallways, living rooms, stairs, and bedrooms shall receive carpeting.

Carpeting:

Carpeting of approved quality (26 Oz. minimum fabric face weight per square yard, cut pile), secured with tackless wood-strip fasteners and synthetic jute or foam padding is the standard for unit living rooms, stairs, and bedrooms. Common stairs, and hallways shall have a minimum of 28 oz. carpet and heavy padding or linoleum flooring and vinyl treads and risers.

Bathroom Floors:

In order to ensure durability, the entire bathroom floor shall be either tiled with a floor grade tile, non-slip glazed or unglazed, and include a sanitary base (tile trim piece or cap) at all wall and floor junctures, or sheet vinyl with one-piece painted wood or MDF baseboard. Vinyl composition tile is not approved for full bathroom floors.

“Respiratory Friendly” Homes: In order to ensure minimum out-gassing and durability, the

RESIDENTIAL DESIGN STANDARDS

New Construction

entire bathroom floor shall be either tiled with a floor grade tile, non-slip glazed or unglazed, and include a sanitary base (tile trim piece or cap) at all wall and floor junctures, or 2.0 mil Marmoleum or equal linoleum product with one-piece painted wood or MDF baseboard. At other locations where sheet vinyl or VCT might be used, 2.0 mil Marmoleum or equal linoleum product with one-piece painted wood or MDF baseboard shall be installed.

Kitchen Range Backsplash:

Whenever the area behind the cooking range, is painted gypsum wall board, high pressure laminate or ceramic tile shall be installed and trimmed with stainless steel J-trim. The laminate shall be as wide as the range, and fit from the underside of the cabinet above or the ducted range hood down to 30" A.F.F.

Interior Paint Schedule:

Paints shall be limited to Benjamin Moore, Sherwin Williams, Pratt & Lambert, Martin-Seymour, Devoe, Reynolds, California or equal quality products applied at the rate specified by the manufacturer. Paint shall be limited to low or no VOC.

Gypsum Drywall – Ceilings: 1 coat of latex-base primer and 1 coat latex-base interior flat (ceiling white) paint. Kitchens and bathrooms shall receive 1 coat primer and 2 coats semi gloss odorless Alkyd enamel. Sand finish is not permitted.

Gypsum Drywall- Walls: 1 coat latex-base primer and 2 coats interior latex-base egg shell paint. Kitchens and bathrooms shall receive 1 coat primer and 2 coats semi gloss odorless Alkyd enamel.

Plaster Ceilings: 1 coat latex-base primer and 2 coats latex-based interior flat (ceiling white) paint. Kitchens and bathrooms shall receive 1 coat primer and 2 coats semi gloss odorless Alkyd enamel.

Plaster Walls: 1 coat latex-base primer and 2 coats latex-based egg shell paint.

Stained Woodwork: 1 coat oil-base interior wood stain and 2 coats satin or semi gloss polyurethane varnish.

Natural Finish Woodwork: 1 coat sanding sealer and 2 coats satin or semi gloss polyurethane varnish.

Painted Woodwork: 1 coat interior enamel undercoat and 2 coats interior semi gloss odorless alkyd enamel.

Ferrous Metal: 1 coat rust-inhibiting (Rust-oleum or equal) primer, 1 coat interior enamel undercoat and 1 coat interior semi gloss odorless alkyd enamel.

Exterior Paint Schedule:

Paints shall be limited to Benjamin Moore, Sherwin Williams, Pratt & Lambert, Martin-Seymour, Devoe, Reynolds, California or equal quality products applied at the rate specified by the manufacturer. Paint shall be limited to low or no VOC. All exterior trim and siding shall be backed primed.

Painted Wood Finish: 1 coat exterior primer and 2 coats semi gloss alkyd enamel.

Transparent Wood Finish: 1 coat oil-base sealer and 2 coats spar varnish.

Zinc Coated Metal: Whenever using galvanized metal, the surfaces shall be cleaned with a non-petroleum-based solvent, removing pre-treatment, oil and contaminants from the surface prior to applying 1 coat galvanized metal primer, 1 coat interior enamel undercoat and 1 coat interior semi gloss odorless alkyd enamel.

RESIDENTIAL DESIGN STANDARDS New Construction

DIVISION 10: ACCESSORIES

Toilet Accessories:

All full bathrooms shall receive 2-24" towel bars, robe hook, shower curtain rod, toilet paper holder, and mirror-front medicine cabinet. Finish shall be polished chrome.

All half bathrooms shall receive 2 towel bars, robe hook, toilet paper holder, and wall mirror. Finish shall be polished chrome.

DIVISION 11: APPLIANCES

All applicable appliances shall be Energy Star rated.

- Range hood vented to outdoors.
- Garbage Disposal, 1/2 HP minimum.
- 30" Gas range with self-cleaning oven.
- Dishwasher.
- Frost-free Refrigerator, adaptable for installation of an automatic ice maker, sized per number of Bedrooms as follows:

1 Bedroom Unit.....14 Cu. Ft. minimum.

2 Bedroom Unit.....18 Cu. Ft. minimum.

3 or more Bedrooms20 Cu. Ft. minimum.

DIVISION 12: FURNISHINGS

Window Shades:

All windows (except basement) shall receive properly sized window shades: fiberglass-coated, vinyl plastic, fire-retardant, fade-resistant roller shades with large diameter cotton cord attached to slat. Mini blinds are not acceptable.

DIVISION 15: PLUMBING / HVAC FIRE PROTECTION

Fire Sprinkler Systems:

Drawings of projects consisting of more than two units in one structure shall have an approval stamp and signature from the Fire Department.

When designing Fire Sprinkler systems, only in exceptional situations will standpipes and sprinkler piping be allowed to be exposed below finished ceilings. It is required that all efforts be taken to use concealed pendant type sprinkler heads and trim plates. Soffits and chases may be utilized, but only after review by DND Design Staff.

PLUMBING

Plumbing Fixtures:

- Insulate *all* hot and cold water supply pipes and *all* heating pipes throughout the structure.
- Take care to seal all floor, ceiling and wall penetrations with approved draft stop material.

The following is a list of minimum standard fixtures, faucets and accessories:

P-1 In Kitchens without dishwashers, the sink shall be a double-bowled, Elkay PSR3322, 33" x 22", 20 Ga. stainless steel unit with four holes or other approved equal; to accommodate a Delta Model No. 400, chrome, single handle faucet with spray attachment or other approved equal. Otherwise, an Elkay PSR2522, 25" x 22" or other approved equal, 20 Ga. stainless steel unit with four holes shall be used.

P-2 Bath Lavatory and faucet; 'cultured marble' w / integral bowl, front overflow and backsplash. Moen or Delta (2.5 GPM) single lever chrome washerless faucet with aerator, flow restrictor, lift rod and pop-up drain.

P-3 Toilet; two piece close-coupled siphon jet vitreous china (white) 1.6 Gal. flush low consumption, round bowl toilet, 12" rough, or equal with a consumer rating of 70 or above. The toilet rated at 70 by Consumers Report (June '98) was the Universal Rundle Atlas Model # 4079. The toilet shall include a Bemis, or equal, solid plastic closed seat and cover, and a chrome supply and flexible riser.

RESIDENTIAL DESIGN STANDARDS

New Construction

P-4 Bath tub; 60" x 30" x 14" American Standard, white, 'Americast' enameled steel w/sound-deadening polymer backing, non-slip bottom or Kohler, Mustee or Lasco one-piece fiberglass tub unit (60" x 32" x 72" high) with chrome plated B/W/O, diverter, strainer and Symmons S96-2X chrome pressure-balancing anti-scald bath/shower valve, or equal, with chrome spout and shower head. Steel tubs are not allowed.

Washing Machine Hook-up:

Laundry hook-ups are required for each unit in One and Two Family residential construction. If a Laundry hook-up is installed within a Unit above living space, a plumbed floor tray shall be provided. For Affordable Units, one, two and multi-family closet space for the washer and dryer should be side by side shall be provided. Dryer power source should be gas rather than electric.

Hose Bibbs:

Freeze-proof hose bibbs, or spigots, must be provided in sufficient number to allow watering of all lawn areas and plantings.

HEATING

Heating Equipment:

Sealed-combustion FHW (Forced Hot Water) System: (Required at all 1 and 2 family – construction)

Provide high efficiency sealed-combustion Burnham Revolution Series, Weil/McLain Gold Series, or equal gas-fired boiler with an A.F.U.E., (Annual Fuel Utilization Efficiency) of 85 or better for gas FHW. Domestic hot water heater shall be an Amtrol, 'Superstor' or equal 40 gal. Insulated Stainless steel storage tank w/ Sparco or equal tempering valve and separate zone valve and/or circulator, Slant Fin 'Fineline 30' or other approved equal hot water baseboard radiation element complete with bleeder valves,

cover and trim in accordance with IBRM specifications.

Particular attention to location of vent terminations re: walkways and windows must be made for design and Code compliance.

FWA (Forced Warm Air) System:

Provide a high efficiency or hydro-air system to heat warm air. Gas fired boiler shall have an A.F.U.E. (Annual Fuel Utilization Efficiency) of 92 or better. Provide new flue pipe with sections fastened with sheet metal screws as per Code. Provide new supply and return sheet metal plenums, required safety switches, thermostat and all wiring necessary for proper operation. Provide all sheet metal ducting, properly secured with straps, sealed with mastic, according to code on both supply and return with dampering capabilities to each habitable room. All ducts shall be located within the envelope of the house. All grilles and registers shall meet specifications for that particular application, i. e., floor or wall discharge. This system shall be adaptable for A.C.

For Oil-fired applications, all the above, and include a Beckett, Carlin or other approved equal retention head oil burner, 275 Gal. storage tank w / plastic sheathed soft copper supply buried in the floor slab and a required 'kill switch' located in the living area near the basement stairs.

Thermostat Controls:

The use of programmable set-back thermostats is required to promote energy savings.

VENTILATION

Bathroom Ventilation System:

At full and half bathrooms, install exhaust fan designed for continuous operation such as Panasonic 110 CFM "super quiet" .5 sone fan unit (Panasonic FV08VQ at 2 bedroom units and FV11VQ at 3 bedroom or larger units) connected to the outdoors with 6" insulated duct discharging through a galvanized steel or aluminum wall or roof cap with a back draft

RESIDENTIAL DESIGN STANDARDS

New Construction

damper, insect screen and wind hood. Ducting at kitchens and baths shall run straight to the exterior and pulled tight without kinks or bends. Controls for Full Bathroom exhaust fan shall be 'Airtrack Programmer' by Tamarack Technology of Wareham, MA, or equal to boost ventilation by 50%, adjustable from 15 to 60 minutes for bathroom exhaust discharge. All bathroom doors shall be undercut 1/2" to promote required changes throughout.

DIVISION 16: ELECTRICAL

The electrical components shall include, but are not limited to the following:

- Front and rear porch lights.
- Ceiling fixtures in building common areas, entry foyers and unit hallways, unit stairways, dining rooms, kitchens, bathrooms including additional fixture over kitchen sink and bathroom mirror, walk-in closets, and basements.
- Hard-wired smoke detectors.
- Telephone jacks in Kitchens, Living room and all Bedrooms.
- Cable jacks in Living Room and Master Bedroom.
- Switched outlets in Living Room and Bedrooms. 3 way switches in living rooms, kitchens, and hallways.
- 20 Amp circuits in Living Room and Master Bedroom for future AC units under windows.
- All electrical devices at exterior walls and top floor ceilings should have airtight boxes or 'polypans'.
- Attempts at energy conservation re: lighting levels should not sacrifice those light levels, but rather match them, (foot candles or lumens of lighting), to the needs of the areas illuminated.

Public and Common Metering:

In dwellings with two or more units, a separate Public Meter with all common area circuitry

shall be provided. Meters and T boxes at exterior shall be mounted on appropriate backer board such as molding-trimmed MDO fastened to the sheathing.

Sub panel Metering:

Whenever running a service line from the Main panel board to a sub panel board, the use of aluminum wire is not permitted. The sub panel shall be fed by a copper conductor with ground.

Security alarm system: Door and window contacts at lower levels and any easily accessed upper windows and doors.

Lighting:

All lighting shall meet Energy Star requirements and be approved by DND.

Clothes Closet Lighting:

To provide light in walk-in closets, an external switched, wall mounted, light fixture above the door head shall be provided.

Ceiling Outlets and Switches:

Living Rooms Dining Rooms, and Bedrooms require a ceiling-mounted fan box and controlled by switching, whether or not a fan is intended to be used. The installation of a blank canopy (white) for future use will complete the installation. If the room has one entrance door, one single-pole switch is required. If the room is accessible from two locations, two three-way switches are required. Switches should be located on the knob side of the door, approximately 48 A.F.F. In bedrooms and living rooms, wire half of a duplex receptacle to a switch at the entry door.

Voice and Data Service:

Phone jacks or modem connections shall be installed in the Kitchen, Living Room and all Bedrooms.

FIRE/SMOKE DETECTORS

Smoke detectors shall be hard-wired to comply with the Electrical Code. Additionally, any

RESIDENTIAL DESIGN STANDARDS
New Construction

smoke detector within 20 FT of a kitchen or bathroom shall have a Photoelectric head with a battery back-up to comply with the Fire Marshall's regulation, currently in effect, which shall include a detector in every bedroom. Thus, with battery back-ups, storms and/or black outs will not jeopardize the fire protection provided.